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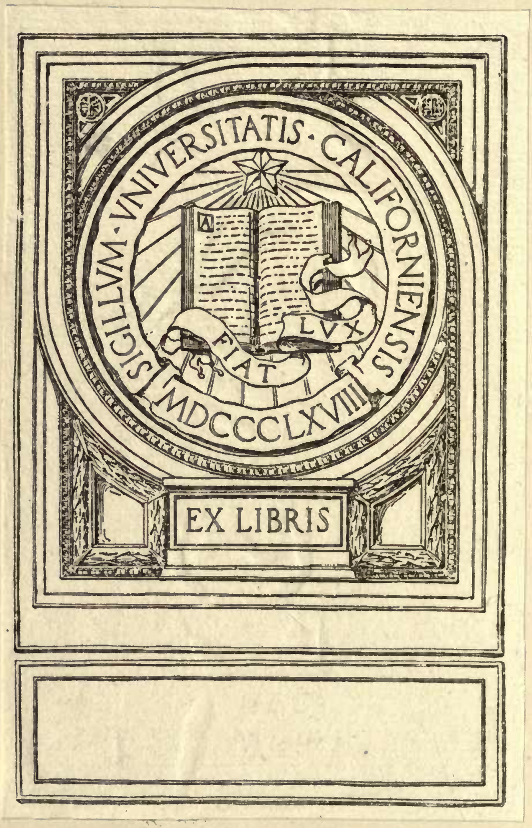
MAKING PATHS AND DRIVEWAYS

CLAUDE H. MILLER



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MAKING PATHS
AND DRIVEWAYS

THE HOUSE & GARDEN MAKING

BOOKS

IT is the intention of the publishers to make this series of little volumes, of which *Making Paths and Driveways* is one, a complete library of authoritative and well illustrated handbooks dealing with the activities of the home-maker and amateur gardener. Text, pictures and diagrams will, in each respective book, aim to make perfectly clear the possibility of having, and the means of having, some of the more important features of a modern country or suburban home. Among the titles already issued or planned for early publication are the following: *Making a Rose Garden; Making a Lawn; Making a Tennis Court; Making a Fireplace; Making a Garden of Perennials; Making a Rock Garden; Making a Garden with Hotbed and Coldframe; Making Built-in Bookcases, Shelves and Seats; Making a Garden to Bloom This Year; Making a Water Garden; Making a Poultry House; Making the Grounds Attractive with Shrubbery; Making a Naturalized Bulb Garden;* with others to be announced later.

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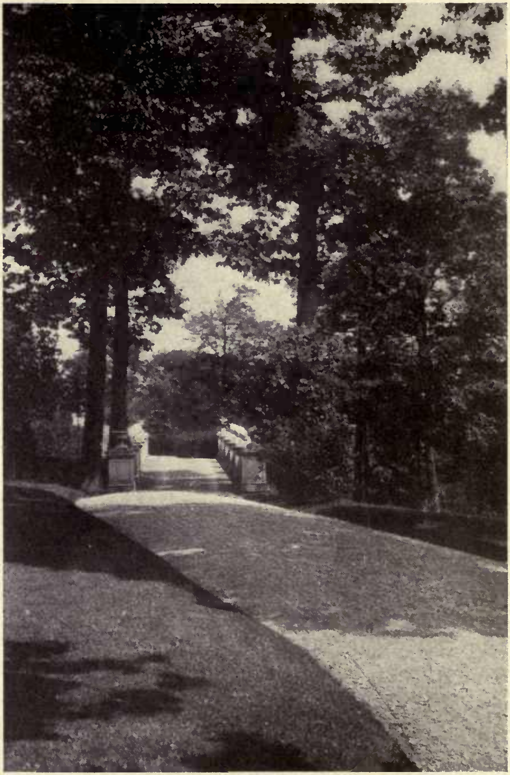

A well made and well kept driveway on which the surface dressing is gravel. Stone tending towards yellow rather than towards blue will be found to harmonize better with lawn and trees

MAKING PATHS AND DRIVEWAYS

By C. H. MILLER

UNIV. OF CALIFORNIA

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MAKING PATHS
AND DRIVEWAYS

CALIFORNIA

Making Paths and Driveways

GENERAL PRINCIPLES

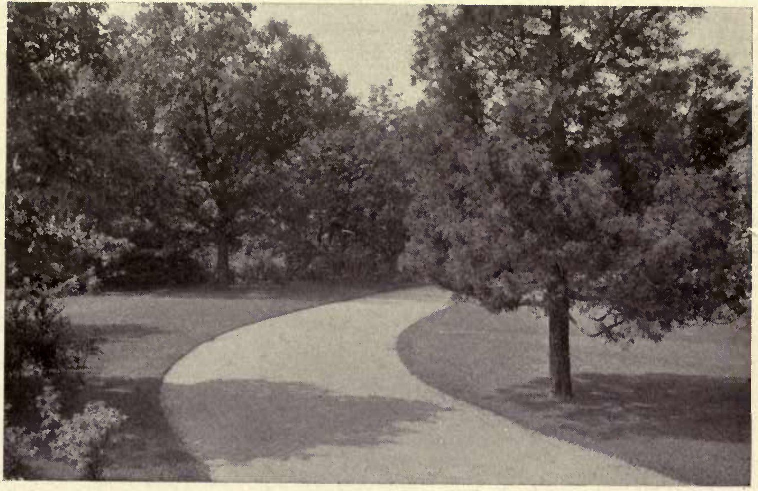
WHEN we build a new house the subject of driveways and paths often comes along as an afterthought. If the site where we build happens to be a rough piece of ground removed some distance from the public road, the construction of the house itself will have developed at least one road, possibly several. The various materials that enter into the construction of the building will have to be brought in by teams and these naturally will select the shortest route from the main road, or the one that avoids the steepest grades.

Very often these trails happen to be surprisingly near the best way for our permanent roadway to run. We must not, however, be influenced by them. While a straight line is the shortest distance between two points—the house and the highway for instance—the shortest distance does not always produce the best artistic effect. As a rule a curved roadway or path is far more attractive than a straight one. Generally speaking, a short path should be straight and a long one winding or curved. This is not a fixed rule, however, as no rule can be made that will meet all conditions. It is purely an empirical proposition. Each case must be decided upon its own merits. A great many elements enter into it; the architecture of the house itself and the spirit of the place are important factors. Some houses require a straight formal roadway, and others, especially when half hidden by trees, demand a winding road.

A road should be unobtrusive and not a feature of the place. It is really a necessary evil. No road ever possessed the beauty of a well-kept lawn with flowers and shrubbery running right up to the foundations of the house. In locating a road we must consider the necessities of life as well as the artistic effect. We should always provide some convenient place where horses may be tied, and ample space should be furnished for motors and carriages to turn around. It is rarely possible, except in the case of pretentious estates, to have a separate driveway for tradesmen. We should therefore so locate our road as to make the service of the butcher, the baker and the candlestick maker as unobtrusive as possible. This would not be the case when a drive passes directly in front of our porch or front door.

A very simple plan, and one that is often possible, is to have a roadway come directly from the main highway to the rear of the house, with a branch running around the house itself to be used by the owner and his guests.

As a rule a curved drive is much better adapted to artistic landscape work than a straight one. The corners and angles of roads and paths are ideal sites in which to plant shrubbery and trees, and along some winding walk a perennial border proclaims loudly the fact that we have been



A curving driveway that is well planted. Jens Jensen, landscape architect

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emancipated from "the flower bed in the middle of the lawn" idea of our recent ancestors. Our remote ones knew better. They lived before the days of railroads whose landscape work around stations has influenced the public taste in landscape decoration just as surely as the interior of a Pullman car finds its prototype in the interior of the home of a Western mine owner. Sometimes a curved drive is an affectation. A driveway should never strive for an effect. It should be the obvious thing to do.

In fixing the course and direction of a drive it is advisable to employ the services of a surveyor to stake it out. In this way grades can be determined that will require a minimum amount of excavation or fill, and we can have a basis upon which to let a contract for the work. No matter what means are employed, however, there is no test that proves the practicability of corners and turns in a drive so well as actually to drive over it. If we can negotiate corners easily without the necessity of turning the wheels of our carriage so that they touch the sides, or of performing violent evolutions with the steering wheel of our motor, we know that for practical use our road is properly laid out. It is usually practicable to drive over the staked-out course of a curving road to determine this before the road is built. Of course this advice applies only to restricted plots of ground. A very common expedient for laying out a road for a small country place is to make a pear-shaped affair directly in front of the house. This is an especially ugly device and one that almost always results in impossible corners. The crowning insult to offend the lovers of good taste is to make a flower bed in the middle of the "pear" and to line the drive with whitewashed stones.

THE LOCATION OF THE DRIVEWAY

NEVER sacrifice a shade tree for the benefit of a road if there is any other possible course for it. The angle that occurs in Broadway, New York, at Grace Church, is said to be due to a favorite pear tree that stood in the way of the extension of the street and which its owner, Peter Stuyvesant, refused to permit the road builders to cut down. Perhaps the countless millions of people who in the growth of the city have been turned out of their course may not have justified the attitude of Peter Stuyvesant; but the idea was good at any rate and for a private place, even if we and our visitors and the butcher's boy are obliged to take a few extra steps because our road has been curved to save some old oak or elm, the end justifies it.

In locating a road the major considerations are these: the relation of the roadway to the house and other buildings, the ease of construction—which includes the economy that results from a minimum amount of grading, and the availability of road-making material. The grade is very important. A steep grade should always be avoided where possible. Hillside roads are not only expensive to maintain in good condition, but when they are coated with ice they are also dangerous. While we naturally select a high site for our dwelling, we should also have in mind a site that will permit of the construction of a roadway. A steep grade is objectionable in that it permits a rush of water during heavy storms which will soon wash gullies and holes and ultimately carry away the roadway itself. The common way to prevent this, in earth roads, is by means of water breaks or "thank-you-marms," as they are sometimes called. While such makeshifts perhaps are justified on a country road that may ascend a mountain for a mile or two, they would be absolutely unpardonable on a private driveway of a few hundred feet.

A very interesting experiment, held under the direction of the Department of Agriculture, showed that the same amount of energy which a horse expends in pulling 1,000 pounds on the level will, if the grade is

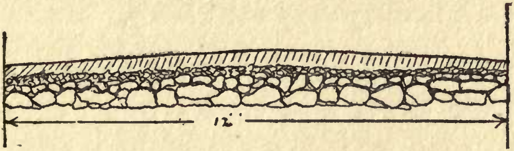
1 foot in 100 feet, be expended to pull 900 pounds
“ 50 “ “ “ “ “ 810 “
“ 44 “ “ “ “ “ 750 “
“ 40 “ “ “ “ “ 720 “
“ 30 “ “ “ “ “ 640 “
“ 25 “ “ “ “ “ 540 “
“ 24 “ “ “ “ “ 500 “
“ 20 “ “ “ “ “ 400 “
“ 10 “ “ “ “ “ 250 “

This shows why so many automobiles that are speedy on the level are not satisfactory as hill climbers.

THE IMPORTANCE OF DRAINAGE

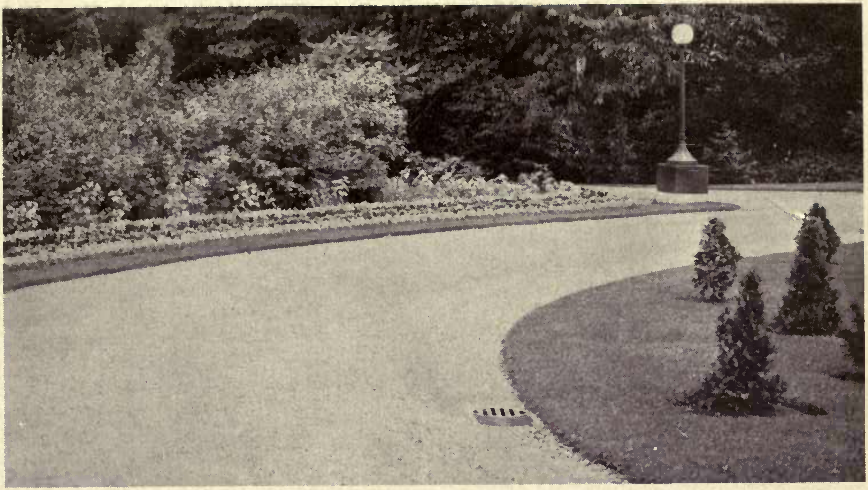
GOOD drainage is an essential requirement of a road, irrespective of the material with which the road is constructed. The same principles apply whether the road be of earth, macadam, gravel, limestone, sand or clay. First of all in importance is the shape of the road in cross-section, and the proper amount of "crown," as it is called. The object of a crown, which is the arching up of the surface from the sides to the center, is to enable it to shed water instead of soaking it up. A roof is pitched for the same purpose. In ordinary practice a crown of three-quarters of an inch to the foot is sufficient. Too much crown makes difficult driving and too little makes a road that soon wears out.

Where local conditions make it necessary for water to cross a road instead of following a ditch on the side, this should always be accomplished by means of culverts of some kind. Ordinary vitrified tile, or even wooden boxes made from two-inch planks, will make satisfactory culverts. Better ones are made of concrete which has been cast in a wooden form and reinforced with wire and pieces of metal. A culvert, in effect, is nothing but a small



Whether the driveway be of earth, macadam, gravel or clay, it should be "crowned"—that is, having the middle higher than the sides in order to shed water into the gutters. Three-quarters of an inch to a foot of width is sufficient crown bridge and therefore should be strong enough to sustain the weight that may be put upon it. A culvert should be made sufficiently large to carry away the sticks, leaves and rubbish that are sure to accumulate. It should also have sufficient pitch to carry away water freely. In some cases, where a culvert is not possible, a water course must cross a road on the surface. Such cases will require a drainage gutter, which should be built of cobblestones or other material that will not be washed away.

Unless a road is properly drained the water which accumulates under the surface will freeze in the winter and heave up the surface material. This brings up the importance of a good foundation for a road. Where possible it should be excavated first



Some provision should always be made for drainage. In this case there is a blind drain running under the edges of the driveway, the openings to which are protected by iron gratings

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and a foundation of rock put in. When mud holes develop it is usually due to a faulty foundation, which no amount of filling in of new road material will correct permanently. The thing to do is to dig up the soft place and to fill in the hole with foundation stones. Then you are rid of the mud hole for all time.

It is the custom in many parts of the country to repair roads with the material that is dug from the sides. This material rarely makes a good road. It has been washed from the road as a rule and the clay which should hold it together and cause it to pack has been leached out. Always get fresh material if possible from a bank or pit.

VARIOUS KINDS OF DRIVEWAYS

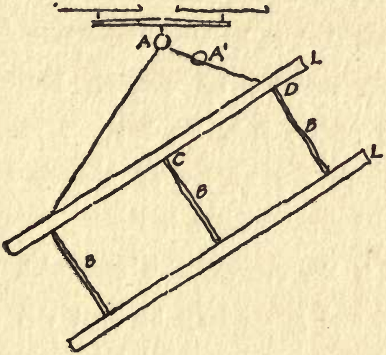
THE simplest road, and of course the most common one, is made of earth. Usually, for a simple house in the country, this is all that will be required. After we have staked out the course of our roadway we can, with hand labor by means of picks, shovels and rakes and with material dug from the sides or brought from some convenient bank by means of carts or dirt wagons, crown up a roadway which will meet the necessity of our case. The advantage of obtaining our road material from the sides of the road is that this process will make a drainage ditch or gutter to carry off the surplus water. Where a long stretch of road is necessary, and a minimum of expense is desired, a satisfactory result can be obtained merely by filling in the low places and grading the natural surface of the ground.

In country districts where most of the public roads are of earth, the local township or municipality usually owns a road machine, which is a four-wheeled truck with a planing device underneath. This acts as a sort of plow and throws the earth from the sides into the middle of the road where it can be raked smooth by hand. By plowing a few furrows on each side of our proposed road and by running this machine over the course a few times, we can pile up the earth into the center and thus construct a roadway at a minimum amount of expense.

As private driveways are not called

upon to sustain heavy traffic, they may be made much more cheaply than thoroughfares designed for the general use of the public. We seldom have occasion to use our drives for heavy trucking except on the rare occasions when the coal man comes around, and if our road will not sustain the weight of a ton or two of coal, we can arrange for its delivery so that it will come when the ground is frozen and when weight will not make any material difference.

A device that is in general use in the Middle West, where the prevailing road material is of clay, at a cost of less than ten dollars a mile, has transformed the roads of that section into model turnpikes. It is known as the "split-log road drag." A perfect earth road must have three attributes, and all three can be acquired by the intelligent use of this device. A road must be crowned, hard and smooth. Then it is in a condition to shed water instead of soaking it up. Strange as it may seem, the worse the condition of the road material, the better the ultimate road becomes by using the road drag. Clay, for instance, which when thoroughly water-soaked makes a terrible road is, by dragging, molded and tamped into a form that bakes on the surface and, no longer absorbing the water, makes the best kind of an earth road. The time when the most effective work can be done with a road drag is in the early spring. It perhaps would not pay the owner of a small private place to use a road drag on his property, but its cost is so small that in every community where the roads are principally of clay, and where there are few stones or rocks to contend with, it will prove to be a real blessing. Every citizen of a community should be interested in the general condition of the public roads which he is obliged to use, consequently even if he has a drag for his private use perhaps the result of his example will cause the practice of road dragging to become general. The diagram published herewith shows how a drag is constructed. It is, as its name implies, simply a split log which is fastened together so that it will drag over the road and act as a planing device. The platform enables the operator to add weight to the weight of the device itself and to cut down the ruts and fill in the hollows of a road until it presents a smooth surface. A very interesting bulletin regarding the construction and use of the King split-log road drag may be



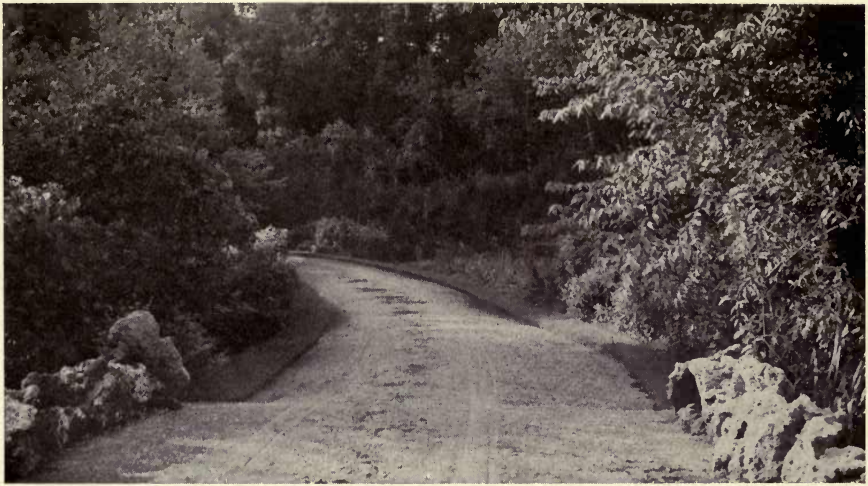
The split-log road drag. LL—split logs, 9 feet long, 10 to 12 inches thick, set on edge 30 inches apart, flat sides to the front. BBB—strong oak bars wedged into 2-inch auger holes in logs. For ordinary work hitch at A and stand at C on a plank laid on the cross-bars; for ditch cleaning or to make the drag throw more dirt to the left, hitch at A′ and stand at D

obtained free by addressing the State Board of Agriculture of either Kansas or Missouri.

A private roadway should be narrow. There are numerous reasons for this. First of all, such a road is far more economical to construct. Each square foot of road that we build and maintain costs a certain amount of money. Hence the fewer square feet, the less our road will cost. In the matter of upkeep an important consideration in favor of a narrow road is the comparative ease with which weeds and grass may be kept out of it. Nothing is quite so unsightly or so indicative of a lack of self-respect on the part of the owner of a place, as a driveway that is overgrown with weeds, plantain, grass and other vegetation. No matter how attractive may be our house, grounds or shrubbery, we must keep our roadway looking clean or the effect is hopelessly marred. It follows therefore that the more closely the width of our drive approaches what is actually required for traffic, the more economical and the easier its upkeep is. Furthermore, nothing especially is gained by excessive width if the curves of a road are made on true principles. A width of eight feet is sufficient for a driveway, and twelve feet is really all that will be required even for the purpose of turning out. If you will measure the actual traveled width of a country road, the result will be surprising. It is seldom more than six feet. In fact the tread or width between the wheels of the average carriage or an automobile is 4 ft. 8½ in., or the so-called "standard gauge" for railroads. Sometimes for the sake of appearances it is an advantage to have a wider road than eight or ten feet, but the additional width must be charged to appearance and not to utility.

Before constructing a road, the first thing to do is to establish the grade and provide for drainage. Ordinarily an earth road will not require a subsurface. Where a road is sandy, it will keep in better condition if it is not drained at all, or at least if it rests on a damp subsoil. Of course no road is improved if the surface is allowed to act as a watercourse.

In building a new earth road all stumps, sod and vegetable matter should be removed, as none of these things will ultimately make a durable road, however well they may seem to fill in at first. Perhaps the best earth roads of simple construction are made of a mixture of clay and gravel



A frequent error in amateur road building lies in too great width. Eight feet is sufficient, and twelve is all that would ever be required

blended in the proper proportions, in which the gravel should predominate. After the road is raked smooth it should be rolled and watered and any depressions filled in. This process should be repeated, with more rolling and more watering, until a desired surface and crown are obtained.

Next to a simple earth road probably the least expensive is a road constructed of cinders or ashes. Usually these may be obtained for the cost of hauling from a nearby factory. All there is to the construction of a cinder roadway is to coat the surface with the material and roll it down. Screenings from a stone crusher, which are simply fine particles of crushed stone, are also excellent. Trap rock screenings are the best and those of limestone or granite are also good.

The thickness of a road surface for a private driveway need not be governed by the practice used in making public highways. To build a private road in the same manner as a public one is simply to expend an unnecessary amount of money and labor.

There are several expedients in use for keeping weeds and grass out of a drive. Perhaps there is nothing better than a sharp hoe to cut it. This work is really play if it is done regularly. At the same time the roadway can be raked over and kept in good condition. A hot sunny day is best for this work, as the sun will have a tendency to kill the weeds. Sulphate of iron, brine and a number of other chemicals, if sprinkled on a road in sufficient quantity, will kill all vegetation. There are a number of patented preparations on the market for the same purpose. The brine from an ice-cream freezer can be sprinkled on the road with a watering can and will kill all the grass it comes in contact with. With a properly graveled surface, or one of cinders, few weeds will grow.

All drain pipes and other work requiring excavation should be attended to before a road is built. To dig it up afterward almost always results in soft places which ultimately become puddles when the earth settles, or if they are filled in to allow for this the result is a series of bumps. With roads that are more substantial in their nature it is an expensive operation to dig them up after they are constructed, and while this is frequently done it is almost always the result of shortsightedness on the part of the owner or his architect.

The material of our road will be governed by the size of our pocketbook. Until the advent of automobiles, the ideal road construction was macadam, provided that broken rock was readily available. This construction is simply a mass of angular pieces of rock laid in layers, with the larger pieces on the bottom and with succeeding layers of smaller pieces until the surface is reached, which is given a coating of very fine stone that is rolled and ultimately crushed into dust and is bound together in a compact mass by the adhesive quality of the material itself. Macadam roads have not proven to be durable under automobile traffic, as the tires by suction draw out the fine, dust-like stone and very soon expose the coarser material. When this occurs the road soon goes to pieces. The cloud of dust that usually follows in the wake of an automobile is simply the road going to pieces. As a consequence of this many of the States that were pioneers in good road construction now find themselves face to face with the problem either to rebuild most of their highways at practically the initial expense of the macadam or to take second place in the possession of good roads.

Oil will prevent the disintegration of a macadam road in a measure, as it keeps down the dust. It would be unwise to oil a road on a private place, however. The principal reason is that usually a private driveway also serves as a path, and a certain amount of oil will be tracked into the house, especially by children, to the ruination of rugs. The odor of oil is also an objection, and the only justification in its use is in the claim that this odor has a tendency to keep away mosquitoes, but the remedy is almost as objectionable as the disease. As a rule a roadway near a house is not dusty. If it is, however, a very light coating of oil may be applied and carefully raked over, and then a thin coating of gravel or sand placed over it to keep the oil away from the surface.

Brick roads are very good for private use but they are expensive. The hard vitrified brick should be used. Ordinary soft-burned brick would soon go to pieces with horse traffic.

It is not necessary in the case of a macadam road to construct it in the same manner that a public highway is built. If we have good drainage, a satisfactory result may be obtained simply by a coating of fine rock, the so-called screenings of a stone crusher. Cinders, limestone, oyster shells, gravel, clay and sand are all used to good effect in the same way. The type of macadam road construction that is designed for public use will cost from six to ten thousand dollars a mile, which is from one to two dollars a running foot. This expensive construction would be entirely unnecessary for a private place. A road that is two or three inches thick will meet all requirements. With any kind of a manufactured road that presents a comparatively solid surface and one that is unyielding, a good foundation is absolutely necessary. It must be so constructed that the subsurface will drain away the water and not heave up with the frost. Of course the common rule for house foundations does not apply in the matter of building roads. In the former case the custom is to go below the frost limit, which in many sections is three or four feet. With a road, the idea is to secure good drainage to carry away the water so that when the ground does freeze very little heaving will occur. If a road is built up a little higher than the surrounding ground this will be accomplished.

Recent developments in various types of tar and asphalt roads have shown that they are ideal for automobile traffic when new and when the road is not slippery or coated with ice. Whether they will prove as durable as macadam remains to be seen.

LANDSCAPE GARDENING

CLOSELY allied to the subject of a private roadway is the subject of landscape gardening. Usually the road bears a close relation to the development of planting effects in shrubbery, trees and flowers. There is a tremendous latitude in all of this but it is a fact that the modern tendency of landscape work is away from the time-honored custom of lining our driveways with shade trees. Perhaps straight rows of trees are not altogether true to nature but the contention that they should be placed in the same class with geometrical flower beds is an extreme view and one that cannot be successfully maintained. The greatest beauty of some of the old English estates is due to the rows of trees with which their drives are lined. It is perfectly possible to reconcile the modern trend toward the grouping of trees and shrubbery and of creating broad expanses of lawn with a tree-lined drive. If you want a row of trees along your driveway, by all means have it, but if you also experience a longing to create a flower bed in the middle of your lawn, whether it be star, crescent or square, restrain yourself and spend the same amount of money that the bedding plants—coleus, caladium, cannas, geraniums, alternately pink, red and white, and the castor oil bean tree in the middle, will cost and line your path and road with some hardy perennials—phlox, foxgloves, irises, oriental poppies,

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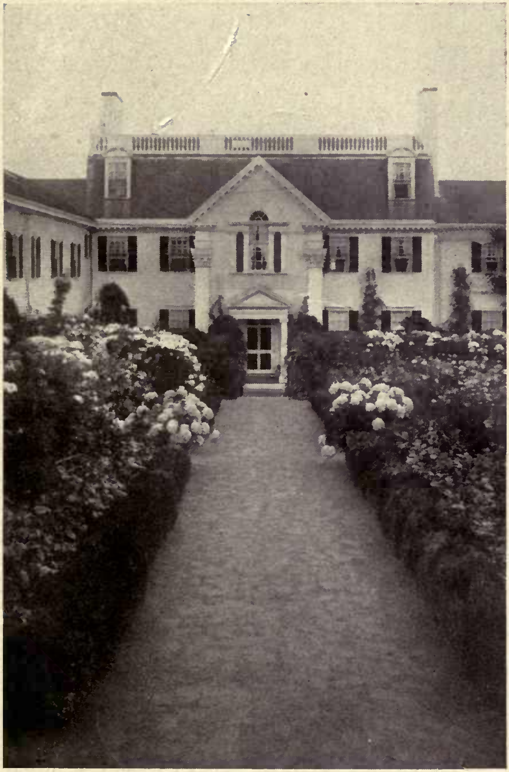


The mechanical side of making a path should be by no means the only consideration, for a path is made or marred by its border planting

and have a row of hollyhocks planted against the house for a background.

The best ten trees for planting along a drive, with the special merits of each, are as follows:

White Elm. The habit of growth of this tree will ultimately make an arch over the drive, but it is especially subject to the ravages of the elm tree beetle and consequently requires constant attention to keep it looking well.

Black Walnut. The slow growth of this tree is its greatest objection. It furnishes a diffused shade.

Sugar Maple. Perhaps this is the best shade tree of all. It is of moderate growth but should be transplanted when young and headed back.

Red Maple. Does not produce as satisfactory a tree as the sugar maple, but makes an excellent street tree.

Live Oak. This is an ideal tree for the South, but it is not hardy in the latitude of New York.

Carolina Poplar. The chief merit of this tree is its wonderfully rapid growth. It is short lived, however, and in no sense to be compared with the hardwoods for this purpose.

Pin Oak. All oak trees are among the best shade trees, but this variety is the most rapid grower and perhaps the easiest to transplant.

Lombardy Poplar. These trees give the stately towering effect of a French estate. They are extremely rapid growers but possess no value as shade trees.

Linden. Forms a dense round head and

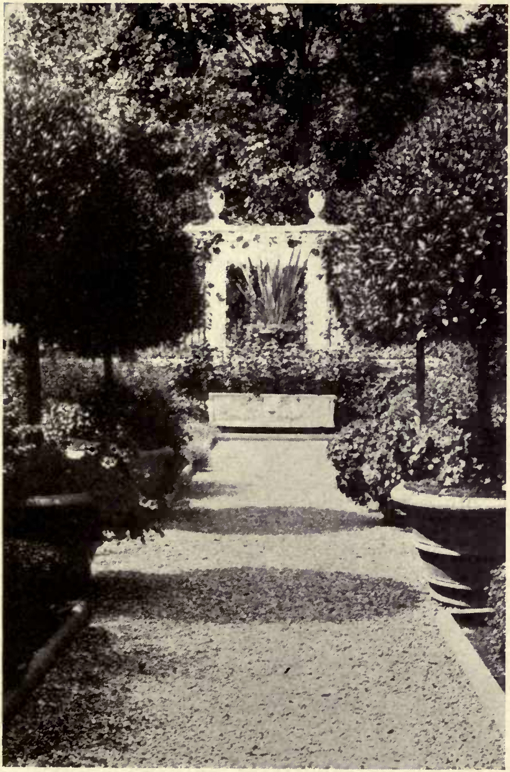
requires practically no attention when once established.

Spruce. The same arguments that may be advanced in favor of the spruce will apply to all of the evergreens. They do not of course possess any value as shade trees, but act as wind breaks and present a cheerful effect in winter when all the deciduous trees are barren.

There is a great variety of other trees used in lining driveways. White birches, locusts, catalpas, dwarf cedars and the various kinds of fruit trees all have their value. In a small place or one that is but a short distance from the roadway, very often the space is too limited to plant any trees at all. In such cases an effective thing is to plant a privet or other hedge along the drive.

KINDS OF PATHS

THE subject of paths is one of considerable latitude. Unlike roadways, paths should have a distinct individuality. The path should be in harmony with the architecture of the house. With a Colonial dwelling if we go in for minor details in the laying out of our grounds, we should have a path that is also Colonial in its effect. For stucco houses and those which are designed on the lines of the half-timbered English architecture, a red tile path is effective. This is especially true if the porch floor is also of red tile. An effect of antiquity is obtained by a pathway made of flat stones laid in sand with a little grass seed sown between the



The character of the path should be in keeping with its surroundings. The concrete coping that is attractive here would be absurd in a path through the woods

spaces. A brick sidewalk is especially appropriate for a Colonial house, but it is also adaptable to more modern styles. Graveled paths are always satisfactory and economical. Even a cinder path will pack into a hard surface and will look well.

Concrete entrance paths seem to be sufficiently versatile to harmonize with almost any kind of a house. If properly constructed they will last indefinitely.

To make the right kind of a concrete path, especial attention should be paid to the foundation. Small cobblestones or broken stone is the best thing to use, but three or four inches of cinders will give a good result. First of all, the course of the path should be excavated to a depth of at least six inches and the space filled in with the foundation material. This should be packed into place and a layer of concrete poured over it. This should be worked carefully into the spaces between the stones by means of a trowel. A satisfactory mixture for the concrete will be what is known as the 1-2½-5 mixture, that is to say, one part of Portland cement to two and one-half parts of clean sharp sand and five parts of broken stone or cinders. Wherever corners occur, the concrete should be reinforced with pieces of wire imbedded in the mass. In fact it is good practice to reinforce all the work with wire as it will prevent the concrete from cracking.

A second layer of concrete should be applied with the broken stone left out of the mixture. This must be floated smooth and troweled to the desired surface. It is the custom among masons to dust some pure cement as a final coating to give the walk a uniformly hard surface and a uniform color. Of course the ordinary methods of doing any concrete work are assumed. A form of wood will have to be built first to hold the concrete until it sets. It is possible by means of some simple tools to make the surface rough or to make ridges or grooves in it to prevent slipping when it is wet or icy. The same methods that are used in constructing a path would apply to a concrete driveway, except that in the latter case the foundation would have to be deeper.

All of the considerations of drainage, good foundations, etc., that apply to roads also have, in a more restricted sense, a bearing on pathways. Of course a path is not called upon to sustain heavy traffic, neither is the subject of dust such a problem, but a path should be so constructed that it is in good condition even in wet weather and when the frost is leaving the ground in early spring. Gravel, cinders, oyster shells, limestone, clay with a top-dressing of sand or gravel, or even soil well packed and with a crown, all make good paths if properly constructed. After all, a path like a road may be regarded as a necessary evil, and the less obtrusive it is and the more perfectly it harmonizes with its surroundings, the better it serves its purpose.

The upkeep of a path consists principally in keeping out the weeds, raking it occasionally, keeping the grass carefully edged along its course and filling in any holes or depressions that occur.

In the case of a house that sets some distance back from the street or public road, the driveway will serve the double purpose of a road for vehicles and a pathway for pedestrians.

HOW TO LAY OUT A DRIVEWAY OR PATH

PERHAPS the simplest solution of the layout problem is to engage a surveyor, but for the man who does things for himself the general method is as follows:

First determine in a general way the best course for the path or driveway. Both the public road and the general approach to the best side of your house, as well as the shortest distance that will be harmonious, should be considered. A number of stakes should be provided to stick into the ground. One man should take a position far enough away and on an elevation if possible so that the entire course of the drive will be visible. In this way

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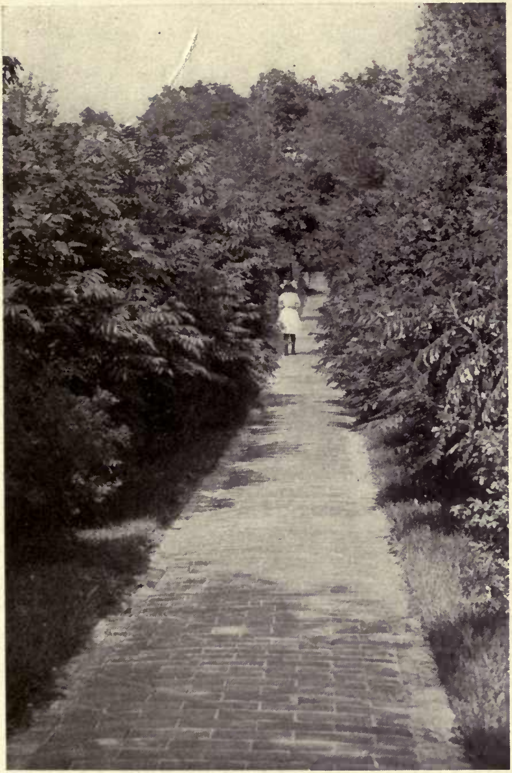

The material used for the path should come in for careful consideration. A long stretch of glaring cement would be far more trying to the eyes in summer than this brick-paved walk

first the general course of the road should be laid out with a single row of center stakes and then the curves and defects in this course corrected. Finally the double row of side stakes should be located, measuring half the distance of the ultimate width of the road each way from the center stakes. To determine the amount of grading and filling necessary is somewhat of a problem. Unless one has access to a leveling instrument and understands its use, a road of this kind should be staked by some one who has such practical knowledge. In most cases, however, the grade will be obvious. Where the construction of the road is to be done by contract all of this work will have to be done to form a basis for computation.

In many parts of the country, the purchase of an acreage plot often carries with it a number of rods of stone wall that were formerly an old farm line. The best disposition for the wall will be to build a road foundation with it, unless it is more useful in the construction of the house or for concrete work or stonework of some kind. It will always be a problem to secure earth for the road. Where there is no bank that it is desirable to remove, the next best way is to dig the road material from the sides, which will accomplish the double purpose of furnishing the filler and of building a drainage gutter.

THE IMPORTANCE OF GOOD TASTE

THE general subject of roads and paths is so closely allied with that of flowers and shrubbery that the whole subject should be considered together. The list of possibilities in horticultural effects are infinite and will be governed largely by our personal preference, the climatic conditions of our neighborhood and many other things. In general it is customary to plant perennial plants as borders rather than as beds. Dwarf box or closely cropped privet also are used effectively. One must guard against the temptation to follow the example of our next door neighbor if we desire individuality for our home. Even if the example is good we should not be imitators. If our neighbor has a hemlock hedge in front of his place and crimson ramblers growing over his front porch, it is no reason why we should do the same. In fact it is a very good reason why we should not. We can just as effectively grow clematis and have no hedge at all, or one of dwarf box. No place is so small that some sort of landscape work is impossible. The tendency may be to try to do too much. The lawn is of first importance and after that the flowers and shrubbery.

It has come to be a consuming ambition recently among house builders to have a pergola. No matter whether the house be remodeled from an old farmhouse, a Queen

Anne cottage or a new Spanish Mission type of bungalow, we see pergolas of all shapes, sizes and previous condition of servitude. The pergola is an excellent institution. It is a vine-covered walk that leads from somewhere to somewhere else. If it is simply an affair stuck up in the middle of a lawn it becomes an absurdity.

Paths that form a part of formal gardens usually have some sort of a focal point to which they converge. The common device for this purpose is a sundial. Garden paths should not be too narrow, particularly if the planting comes close to their edges. There is no objection to having a formal or sunken garden laid out geometrically. In fact this is the common method because it is the obvious thing to do.

The border line between a pathway and a lawn is always a troublesome thing to maintain, as the grass naturally has a tendency to encroach. Frequent edging with a curved hoe that is made for this purpose will be satisfactory, but the permanent method is to have a curb of concrete, or of brick set edgeways.

When we build a new house the expense is usually greater than we anticipated, and as paths and roadways are taken up last they often do not have as careful consideration as they deserve. For this reason it is better to get along with a temporary roadway of earth until we are sure that it is located just where we want it. Then it can be made permanent. On a large estate, no matter how much outside work we may do, the important thing is at least to make

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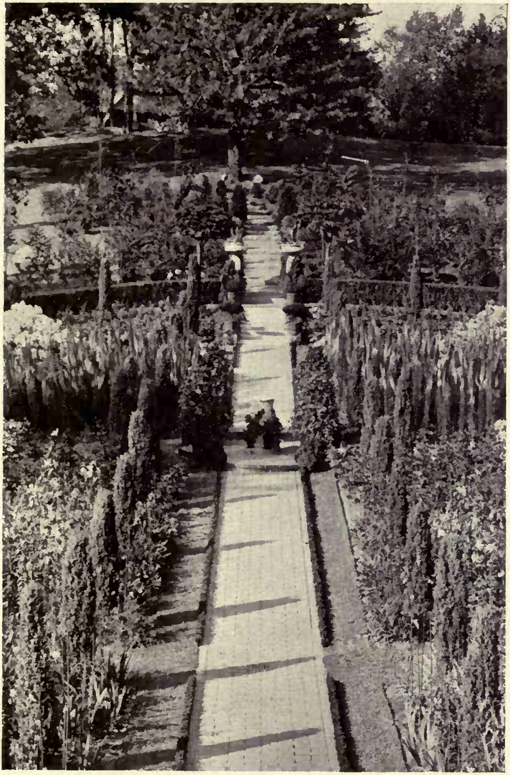

In making a path of this kind where a strip of lawn separates the edging of the path from a garden, much time and trouble will be saved by making the width of the strip agree with the width of the lawn-mower. C. W. Leavitt, Jr., landscape architect

a plan of what we ultimately hope to do, and if we expect to develop it by degrees we may then be sure that our trees and shrubbery are planted in the right places and with the proper relation to something that may come along later. This advice may sound trivial, but nevertheless many an attractive place has been spoiled by indiscriminate planting without a definite end in view. Decide where you may some day hope to have a tennis court, a sunken garden, a windbreak of evergreens, a pergola perhaps, or a fruit orchard, and do your planting accordingly. The English say that it takes fifty years to make a lawn and a hundred to make a good lawn. This may be an extreme view, but it certainly does take five or ten years for a newly planted place to get over its new look, and, as a consequence, the sooner we can plant our shade trees, our orchards and our shrubbery, the sooner the ultimate result will be achieved.

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